LOWER LEY CREEK SUBSITE
PRP NEXUS REPORT
Syracuse Hancock Air National Guard

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Compiled by:

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Executive Summary:

This summary report documents the waste types and waste-in contributions attributable to Hancock Field Air National Guard Base to the Lower Ley Creek Subsite, and provides a brief summary of site history and facts pertaining to the New York Air National Guard Base liability at the Lower Ley Creek Subsite. The report is a summary of data/evidence collected and produced by others. Data sources for the information presented in this document are summarized in the reference section, and select supporting information supporting the conclusions reached in this report is included in Appendix A.

Site History:

The Hancock Field Air National Guard (ANG) base is located at 6001 East Molloy Road in Dewitt, NY. The site encompasses approximately 356 acres and is home to the 174th Fighter Wing (174th FW) of the New York Air National Guard. Built in 1942, Hancock Field was first known as Syracuse Army Air Base and served as a staging area for warplanes bound for Europe. Army Air Forces left the base in 1946, and the 138th Fighter Squadron returned in 1952 with the Headquarters of the 32nd Air Division. In 1984, the 138th FW became part of the larger 174th FW. Hancock Field is also home to the Surface Air Ground Environment (SAGE) Complex, which is a communications center for the military, operated by the United States Army 10th Mountain Division (light infantry) at Fort Drum (NYSDEC, 2000 pg. 4).

The ANG base is located immediately south of the Syracuse Hancock International Airport (SHIA). Several parcels of land associated with the base have been transferred to Onondaga County during the expansion of SHIA (Figure 1, Site map). The remaining property is owned by the United States Government. The New York Air National Guard, which is part of the United States Department of Defense, operates Hancock Field. The North Branch of Ley Creek runs through the eastern edge of the property, and flows to the south and eventually the west before joining the main branch of Ley Creek.

The 174th Attack Wing currently operates the MQ-9 Reaper Remotely Piloted Aircraft (RPA). Prior to May 2010, the 174th FW used General Dynamics F16 C/D “Fighting Falcons” aircraft in its primary mission of providing military defense. Operations that take place at Hancock Field in support of its primary mission include: small arms training, equipment maintenance (e.g. aircraft systems, communications, armaments, vehicles, etc.) fuel storage, oil/water separation from floor and vehicle washing, and storage of hazardous materials prior to offsite transportation and disposal (NYSDEC, 2000 pg. 5).

The Area Maintenance Support Activity (AMSA) #9 facility was once located at 130 Pickard Drive in Mattydale, NY, approximately one half-mile from Hancock Field. The AMSA #9 facility was used for the servicing and repairs of military vehicles. Activities included changing of vehicle fluids and vehicle washing. Used oils were collected into drums and stored until disposed of offsite. Environmental

investigations in 1992 discovered that the shop floor drain discharged directly to the environment without an oil/water separator. Vehicle washing was suspended after this discovery.

The ANG base is permitted as a Small Quantity Generator (NY3570025475) under the Resource Conservation and Recovery Act (RCRA). Wastes are generated from various base activities including the maintenance of aircraft vehicles, armaments, communication systems, general maintenance activities, weapons cleaning, painting and fuel storage. Wastes generated at the site include medical wastes, oil absorbent solids, lacquer thinner, isopropyl alcohol, Jet Propulsion Fuel #8 (JP-8), gasoline, diesel fuel, asbestos, batteries, and antifreeze.

From 1945-1985, varying amounts of battery acid was neutralized at the ANG base and discharged to the sanitary sewer. Sewers at the ANG base discharged to the Ley Creek STP until approximately the late 1960s. During cooler weather, aircraft deicing has occurred which discharges through surface runoff to the North Branch of Ley Creek (when deicing occurs at the ANG base) and Bear Trap Creek (when deicing occurs at the SHIA). Propylene glycol replaced ethylene glycol as the deicing agent in 1994 (NYSDEC, 2000 pg. 6). The ANG base also has a National Pollution Discharge Elimination System (NPDES) permit for storm water runoff at the site (NY0244066). There are seven permitted outfalls under the ANG base NPDES permit, six of which discharge into the North Branch of Ley Creek.

Site Investigations:

In 1982, the Department of Defense (DOD) as part of the mandatory military base realignment program, identified and investigated potential areas of concern (AOC) at the ANG base. Fifteen (15) AOCs were identified as potentially contributing releases to the environment and are described in greater detail below. Information regarding these identified areas of concern has been summarized from the NYSDEC Site Summary Report, June 2000 and more recent available sources.

Site 1, or the FT-1 Training Area was located approximately 1,250 feet west of the North Branch of Ley Creek. The site was used for fire training exercises from 1948-1985. Training was initially conducted once a month, and then every 3-6 months after 1975. During the fire training exercises, approximately 100-150 gallons of waste fuels (including waste oils, paint thinners, solvents and JP-4) were burned. After training exercises were complete, the area was flushed with water, which discharged into a storm water drainage ditch leading to the North Branch of Ley Creek. Hazardous substances such as paint thinner, waste solvents, and pesticides were disposed of at Site 1. Soils were found to be contaminated primarily with polycyclic aromatic hydrocarbons (PAHs), lead and total petroleum hydrocarbons (TPH). The Site has been covered with soil and vegetation, but there is a potential for contaminants to migrate through groundwater to the North Branch of Ley Creek (NYSDEC, 2000 pg. 11). Surface waters collected near the Fire Training area in 1989, contained detectable levels of PAHs.

Site 2 (D-3 Disposal Site) is a 12 acre area located southwest of the housing area that was used from 1950s to 1979 for the disposal of general refuse, construction debris, minor quantities of hazardous waste (i.e. liquid paint residues) and sanitary waste treatment sludge. The site is covered with several

feet of soil and vegetation, but soil contamination has the potential for contaminants to migrate through groundwater to the North Branch of Ley Creek (NYSDEC, 2000 pg. 11).

Site 3 (D-1 Disposal Site) is located south of Stewart Drive and is approximately 10 acres in size. Two settling ponds were used to treat sanitary waste from the late 1950's to the early 1960's. Also, from 1960s to 1974, the site was used for the disposal of general refuse, construction debris, and minor quantities of hazardous waste (paint thinners and partially empty drums of waste solvents and pesticides). The site has been covered with several feet of soil and vegetation, but soil contamination has the potential for contaminants to migrate through groundwater to the North Branch of Ley Creek (NYSDEC, 2000 pg. 11).

Site 4 (D-5 Disposal Site) is located 3,000 feet west of the North Branch of Ley Creek and encompasses approximately .35 acres. This site was used from 1950 to 1976 for the disposal of construction debris, sod, empty drums, ammunitions boxes, and possibly some drums containing hazardous wastes (solvents and paint thinners). The site has been covered with several feet of soil and vegetation, but soil contamination has the potential for contaminants to migrate through groundwater to the North Branch of Ley Creek (NYSDEC, 2000 pg. 11).

Site 5 (S-1 Transformer Area) is located at the corner of South and Third Streets, approximately 125 feet northwest of the Syracuse Airport. The property was used from 1976 to 1980 to store as many as nine transformers at one time. This parcel has been transferred to Onondaga County as part of the airport expansion. The transformers did have leaks in the past, and also two of the transformers were determined to be contaminated with PCBs. The contaminated transformers were moved to the hazardous materials storage area in 1980.

Site 6 (S-3 Pesticides Storage Area) is approximately 0.1 acres in size and is located in the Northwest corner of the ANG base. The site formerly included a 500-gallon concrete Underground Storage Tank (UST) which was used from 1975 to 1985 to store rinse water from pesticide containers and equipment cleaning activities, as well as wash down from entomology shop operations. The tank was subject to infiltration of groundwater during wet weather, and it is believed that the tank-stored rinse water leaked to the surrounding environment. The UST was removed in November, 1989. Soils at Site 6 were found to be contaminated primarily with pesticides in the vicinity of the Pesticide Storage Area.

Site 7 (SP-1 Oil Spill Area) is a storm sewer outfall that drains surface water from the vicinity of the SAGE Complex and floor drains from the Power Plant Building. From 1956 to 1973, fuel oil was mistakenly discharged directly on occasions to the storm sewer from the Power Plant Building. In 1972, an existing 30,000 gallon tank was converted into an oil/water separator to prevent further fuel discharges. Also, in 1973, soil contaminated with fuel oil was removed from the storm sewer ditch. Stormwater discharges to the North Branch of Ley Creek. This property has also been transferred to Onondaga County as part of the airport expansion.

Site 8 (D-2 Disposal Site) is located south of Stewart Drive near the fire station and is approximately 3 acres in size. This site was previously a wetland until it was used from 1970-1974 for the disposal of

construction debris. In 1973, an unknown quantity of waste slaked-lime material with a pH of 12 was also disposed at the site. The site has been covered with several feet of soil and vegetation.

Site 9 (D-4 Disposal Site) is located east of Thompson Road and south of Stewart Road and was used in the 1950s and 1960s for disposal of construction debris. The site has been covered with several feet of soil and vegetation.

Site 10 (S-2 Hazardous Materials Storage Site B/759) is located in Building 759 and has been used since 1980 for the storage of hazardous materials prior to transportation and off-site disposal. No known spill have occurred at Site 10.

Sites 11 and 12 (WT-1 and WT-2 Sand Filter Beds, respectively) were used during the 1950s and early 1960s to treat sanitary wastes generated at the base.

Site 13 (Septic Tank System) includes eight septic tanks, four of which are in operation, and four of which have been closed. The septic tanks are located throughout the base, and each tank covers an area of approximately 300 square feet.

Site 14 (Oil/Water Separators) are located throughout the ANG base. As of March 1, 1995, nine oil/water separators were in use at the base (one was closed, another out of service, and two were under construction). Oil recovered from the oil/water separators is sold to a contractor for reclamation, and the wastewaters discharged to the sanitary sewer.

Site 15 (Petroleum, Oil, Lubricant Area (POL area)) is a 2.5 acre site that was constructed in 1951 to store petroleum, oil, and lubricants. Site 15 consisted of one 215,000 gallon above ground tank (AST), six 25,000 gallon USTs, a fuel pumping building, and systems for accepting and delivering fuel to tanks. Three known spills have occurred in the POL area; a PCB release occurred prior to the 1980s, believed to be from transformers located in the vicinity of the POL area, and two jet fuel releases also occurred in the area, one of JP-4 fuel (2,000 gallons) in 1990, and the other of JP-8 fuel (150 gallons) in June 1994. Soils at Site 15 were found to be contaminated with PCBs (NYSDEC, 2000 pg. 10). The maximum PCB detection was 240 ppm. Groundwater sampling conducted in the vicinity of the POL Area have determined the nature and extent of a PCB Aroclor 1260 plume along with a benzene, toluene, ethylbenzene, and xylene (BTEX) plume from historic jet fuel spills. Groundwater sampling conducted over time reportedly indicates that the groundwater plume had not yet reached the North Branch of Ley Creek.

The AMSA # 9 facility located on Pickard Drive generated oils and fluids from vehicle maintenance. The wastes were collected in drums and disposed of offsite by a contractor. During the 1960s, a portion of the property was filled with construction debris by the site owner. Site investigations in 1994 identified various type of debris including wires, electrical cables, aluminum cans, metal and wood. Soil at the former AMSA #9 facility was found to be contaminated with chrysene, benzo(a)anthracene, and benzo(a)pyrene in surface soils.

In March of 1993, a spill of No. 2 Fuel oil occurred at the AFR Center during the filling of a 2,000 gallon UST. The spill was estimated to be 10-20 gallons of fuel oil and soil removal occurred. During the removal, free product was discovered in the soil from previous spills or leaking tanks.

Known Discharges and Violations:

There have been at least 25 documented spills that have occurred at the ANG base. The spills identified include: releases of propylene glycol to the sewer system, jet fuel spills, leaking transformer oil contaminated with PCBs, airport deicing operations, and fire training activities that burned waste oil and jet fuel, which was subsequently flushed with water and discharged to the North Branch of Ley Creek. From 1945 to 1985, neutralized battery acid was discharged to the sanitary sewer and the Ley Creek STP until approximately the late 1960s.

In 2010, the USEPA began an enforcement action against the ANG base (Case # 02-2011-7501) for non-compliance under RCRA section 9006A (Underground Storage Compliance Order). The Enforcement Action was closed on 7/19/2011 and a penalty of $35,021 was assessed.

The ANG base is currently in violation for effluent exceedances for Quarter 12 (1/1/14-3/31/14) under the Clean Water Act (CWA) for its NPDES permit (NY0244066). Quarter 13 data has not yet been released. Review of the past three years of compliance reporting for the NPDES permit shows that the ANG base was in violation of the NPDES permit for 5 quarters out of 12 quarters. The permit has effluent limitations for oil and grease, benzene, ethylbenzene, Glycol (total), toluene, and xylene.

Ley Creek and Old Ley Creek Channel:

Sediment samples in the North Branch of Ley Creek and Beartrap Creek were collected by NYSDEC in 1996 and 1997. Multiple semi-volatile compounds were detected at concentrations greater than the NYSDEC identified sediment criteria for human health in both the North Branch and Beartrap Creek. Analytical results of sediment samples collected from Beartrap Creek revealed elevated concentrations of metals such as arsenic, cadmium, chromium, copper, lead, nickel, and silver. Aroclors 1242, 1254, and 1260 also were detected at concentrations greater than the sediment criteria for human health in Beartrap Creek (NYSDEC, 1997 pg. 12).

A macroinvertebrate survey of the North Branch of Ley Creek and Beartrap Creek was conducted in 1998, 1999, and 2000 as part of the SHIA Consent Order requirements. The results of the study indicate that the water quality scale (WQS) have values that fall in the “moderate” impact region of the water quality scale. One location on Ley Creek (L-4) falls in the “severe” impact region (C & S Companies, 2001 pg. 29).

In conjunction with the macroinvertebrate survey, a tissue collection and chemical analysis was also conducted. Target organisms for tissue analysis , crayfish and a species of small fish, were analyzed for total solid, priority pollutant metals, mercury, PCB’s and PAHs. “A variety of metals exceeded NYSDEC

levels of concern, with selenium being the most often exceeded. All of the polycyclic aromatic hydrocarbons tested are exceeded in tissue sample at least twice, with benzo(a)anthracene exceeding more than any other compound. None of the sample tests exceeded levels of concerns for PCBs". (C & S Companies, 2001 pg. 31).

Remedial Activities:

In 1995, NYSDEC concurred with the ANG's No Further Action (NFA) recommendation for Sites 2 and 3, and also for Sites 1 and 4 in 2009. In 1998, the 2.5 acre Petroleum Oil and Lubrication (POL) area (Site 15) was listed on the New York State Registry of Inactive Hazardous Waste Sites as a Class 2 site (Site # 734054) as a result of the Department of Defense (DOD) site investigations at the ANG base.

In 2001, a PCB removal action was conducted at Site 15. Over 12,000 square feet of soil was impacted and 2,000 cubic yards of soil was removed and disposed offsite. After the PCB excavation, a benzene, ethylbenzene, and xylene (BEX) removal followed in 2002. Approximately 15,000 square feet of soil was impacted and 5,000 cubic yards of soil was removed and disposed offsite. During the removal, six 25,000 gallon USTs, two concrete underground sumps, and an underground fuel line were also removed.

Additional sampling in 2008 lead to another BEX removal action during which another 2,000 cubic yards of soil was removed and disposed offsite. The excavation bottom was treated with a chemical oxidant, calcium peroxide (CaO2) slurry, prior to backfilling.

An offsite plume which had migrated to the southeast was also investigated in 2008. Private property access issues, however, limited the installation of monitoring wells and ultimately the delineation of the plume. Based on available data collected, it was assumed that the plume terminated under the General Electric (GE) property before reaching the North Branch of Ley Creek.

In 2009, an enhanced bioremediation pilot study was conducted using calcium peroxide (CaO2), which was injected into 20 of the monitoring wells. This treatment was used to enhance the natural attenuation of BEX in the groundwater. A Record of Decision (ROD) was issued in April, 2011.

A Non-Time Critical Removal Action of munitions debris and lead contaminated soil at two munitions response areas identified as SR001- Small Arms Range and Shooting-In Buttress, and SR002- Firing in Buttress began in May of 2014. The soil will be chemically stabilized to render it non-hazardous prior to disposal.

Conclusions:

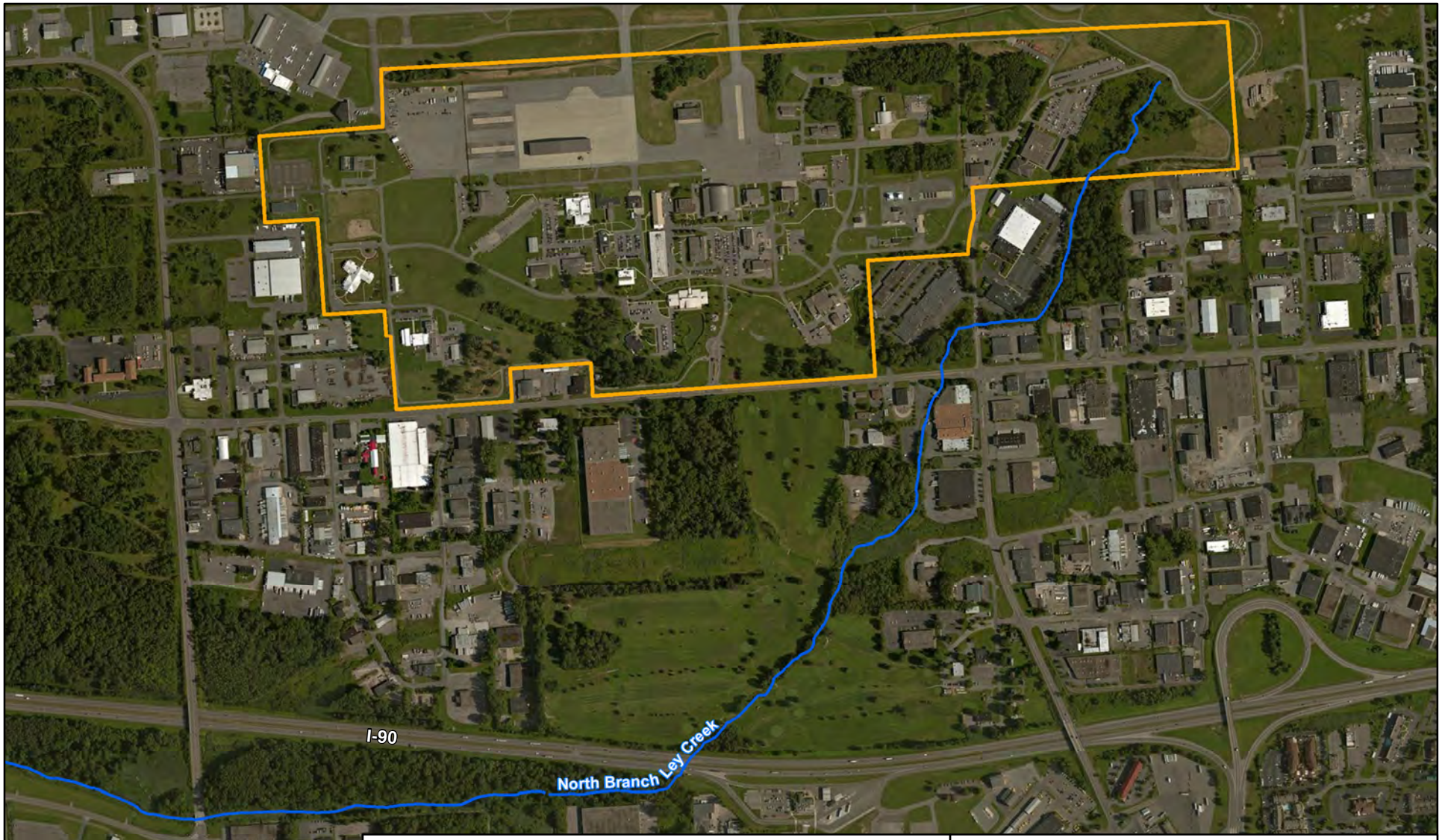
Hazardous substances for which there have been documented releases from the Hancock Field Air National Guard into the Ley Creek Watershed include, but are not limited to: petroleum compounds (benzene, toluene, ethylbenzene, and xylenes), metals, PCBs, Polycyclic Aromatic Hydrocarbons (PAHs), and deicing fluids (ethylene glycol and propylene glycol). Based on available evidence, the ANG base's nexus to Lower Ley Creek includes: discharges, spills, and releases of the aforementioned hazardous

substances from the Facility into soil, sediment, groundwater, and drainage ditches discharging into the North Branch Ley Creek.

Based on the prior reports and studies, Hancock Field Air National Guard, should be given notice by the USEPA of its potential liability at the Lower Ley Creek Subsite and included in any future negotiations between the agency and PRPs.

References:

Information found in this report has been summarized from the New York State Air National Guard-Hancock Field Site Summary Report (SSR) prepared by NYSDEC in 2000, Environmental Investigation Reports by CHA, CH2M HILL, and ERM, facility information publicly available and select reports and other records obtained from USEPA, Onondaga County and NYSDEC. The information found in the SSR Report was originally obtained from the CERCLA Section 104(e) responses United States Department of Defense (Company ID # 2025) as well as supplemental information from the NYSDEC.



Legend

Site Boundary

Ley Creek

Tax Parcels from Onondaga County Water Authority, 2011

0 1,000 2,000 FEET

1:12,000 | 1 INCH = 1,000 FEET

Onondaga County, New York

Project Number: 31.018000.00

HANCOCK AIR NATIONAL GUARD BASE

SITE MAP

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FIGURE 1

Created January 22, 2014 by Patrick Finnerty

Site Assessment Summary

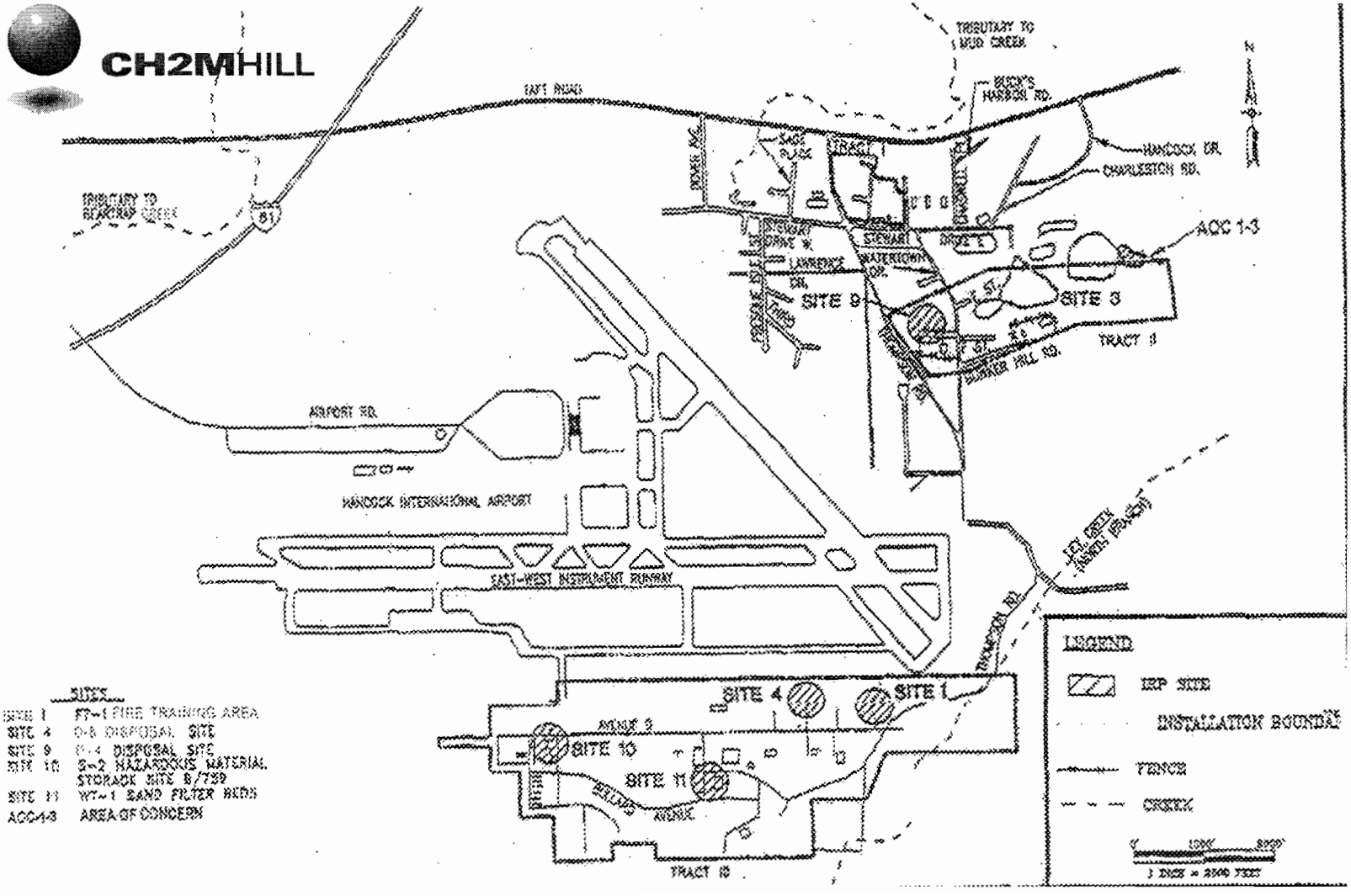

Figure 2: Hancock AOC locations